

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Christian Kratzsch et al.

For:

METHOD AND DEVICE FOR MACHINING

WORKPIECES USING HIGH-ENERGY RADIATION

Attorney's Docket No.:

STUR-37

Assistant Commissioner For Patents

Washington, D.C. 20231

Sir:

PRELIMINARY AMENDMENT

In the claims:

Cancel claims 1-23 and insert new claims 24-46:

24. A method for processing workpieces (20) by means of laser radiation (1), in which the radiation (1) is focused by a processing optic onto a processing site (40), in which the light radiation emanating from the workpiece (20) is received utilizing the processing optic and is analyzed by a detector (11) of a process monitoring system, and in which an optical measurement with respect to a surface of the workpiece is performed in a processing area of the workpiece (20) by means of an external source (32 to 34) of measuring light, utilizing measuring light reflected from the processing area, wherein the light radiation used for process monitoring and the reflected measuring light are detected utilizing a single processing optic.
25. The method as recited in claim 24, wherein the light radiation used for process monitoring and the reflected measuring light are detected utilizing the single processing optic, a selected one of substantially/isoaxially with the light radiation and axially parallel thereto.
26. The method as recited in claim 24, wherein an optical measurement performed with respect to the workpiece surface is a selected one of a measurement of a distance between the processing optic and the workpiece (20), and a mapping of the workpiece geometry before the processing site (40), and a mapping of a seam geometry present after processing, and mapping of a melt (23) produced at the processing site (40).